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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,998	07/30/2002	Hideki Hayashi	MTS -3326US	5820

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EXAMINER	
LAVARIAS, ARNEL C	
ART UNIT	PAPER NUMBER
2872	

DATE MAILED: 05/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/089,998	HAYASHI ET AL.	
	Examiner	Art Unit	
	Arnel C. Lavarias	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 2/14/05.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-23 is/are pending in the application.

4a) Of the above claim(s) 1-13 is/are withdrawn from consideration.

5)☒ Claim(s) 23 is/are allowed.

6)☒ Claim(s) 14,19/14,20/14,21/14,22/14 is/are rejected.

7)☒ Claim(s) 15-18,19/15-18,20/15-18,21/15-18,22/15-18 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendments to Claim 14 in the submission dated 2/14/05 are acknowledged and accepted.

2. The addition of Claim 23 in the submission dated 2/14/05 is acknowledged and accepted.

Response to Arguments

3. The Applicants' arguments filed 2/14/05 have been fully considered but they are not persuasive with regard to newly amended Claim 14.

4. The Applicants argue that the combined teachings of Komma et al. and Yoo et al. fail to disclose or reasonably suggest a convex lens, as generally recited in newly amended Claim 14, the lens including a central area close to the central axis of the luminous flux, the central area providing only a refraction effect. The Examiner respectfully disagrees. It is noted that both Komma et al. (Refer for example to 26 in Figures 4A-B; Figures 19-20) and Yoo et al. (Refer for example to 36 in Figure 5; Figure 7) disclose that the incident surface of the convex lens that is located on the optical axis of the convex lens is a curved refractive surface that provides only a refraction effect (See for example central curved portion of 26A lying on the optical axis of element 26 in Figures 4A-B, 19-20 of Komma et al.; See also central curved portion 'A' in Figures 4a-b, 7 of Yoo et al.). Further, with regard to arguments that Yoo et al. fails to disclose particular limitations, the

Examiner notes that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The Examiner also refers Applicants to Figures 3, 4b and 7 of Yoo et al., which specifically disclose light from the first light source passing through the central, intermediate, and peripheral areas, and light from the second light source passing through the central and intermediate areas.

5. The Applicants' arguments, see in particular Pages 14-15, filed 2/14/05, with respect to Claims 15 and 23, have been fully considered and are persuasive. The rejections of Claims 15-18, 19/15-18, 20/15-18, 21/15-18, and 22/15-18 in the Office Action dated 11/8/04 have been withdrawn.

6. Claims 14, 19/14, 20/14, 21/14, and 22/14 are now rejected as follows.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 14, 20/14, 21/14, and 22/14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komma et al. (U.S. Patent No. 5815293), of record, in view of Yoo et al. (JP 10-283668A), of record.

Komma et al. discloses a convex lens (See for example Figures 4a, 4b, 5, 6, 9a, 9b, 19a, 19b, 20, 21, 27, 20-33, 37-38, 43-45, 47) for allowing luminous flux from a first light source (See for example 52, L3 in Figure 4a, 21) to converge to a first optical information recording medium having a predetermined thickness (See for example Figure 4a) and allowing luminous flux to converge to a second optical information recording medium which is thicker than the first optical information recording medium (See for example Figure 4b), characterized in that the lens comprises a central area close to the central axis of the luminous flux (See central area of 26a in Figures 4a, 4b, 6); a peripheral area far from the central axis (See 26b in Figure 4a, 4b, 6); and an intermediate area located midway between the central area and the peripheral area (See edge or grating portions of 26a in Figures 4a, 4b, 6); the luminous flux converging onto the information recording surface of the first optical information recording medium from the first light source is the luminous flux that has passed through the central area, the intermediate area, and the peripheral area; and the luminous flux converging onto the information recording surface of the second optical information recording medium from the first light source is the luminous flux that has passed through the intermediate area and the central area; and the intermediate area is provided with a diffraction grating (See Figures 4a, 4b; see also grating portions of 26a in Figures 4a, 4b, 6). Komma et al. additionally discloses the diffraction grating of the intermediate area, using diffraction light of the same order, forming luminous flux from the first light source with reduced wavefront aberration with respect to the first optical information medium and forming luminous flux from the first light source

with reduced wavefront aberration with respect to the second optical information recording medium (See col. 26, line 42-col. 29, line 59); of the luminous flux converged onto the information recording surface of the second optical information recording medium from the first light source, the phase of the luminous flux that passes through the intermediate area is shifted with respect to the phase of the luminous flux that passes through the central area by an amount less than 2π (See col. 26, line 52-col. 27, line 8); an optical head including the convex lens and a photoreception element that receives reflected light from the first optical information recording medium or the second optical information recording medium and converts the reflected light to an electric signal (See for example Figure 21); and an optical information recording medium writing/reading apparatus that includes a circuit (See 58 in Figure 21; See also Figures 35, 36, 60, 61, 62, 64) that distinguishes the first optical information recording surface from the second information recording surface and selectively reads information from the electric signal, the apparatus converging luminous flux on either recording medium, receiving reflected light, converting the reflected light, converging the luminous flux that passed through the central area and the peripheral area of the lens onto the first optical information recording medium, and converging the luminous flux that passed through the intermediate area and the central area of the lens onto the second optical information recording medium (See Figure 21). Komma et al. does not explicitly disclose the central area providing only a refraction effect, and lacks the luminous flux converging to the second, thicker optical information recording medium being from a second light source and

having a wavelength different from the first light source. However, it is noted that Komma et al. (Refer for example to 26 in Figures 4A-B; Figures 19-20) discloses that the diffractive portion of the incident surface of the convex lens that is located on the optical axis of the convex lens is a curved refractive surface that provides only a refraction effect for light passing only through that section (See for example central curved portion of 26A lying on the optical axis of element 26 in Figures 4A-B, 19-20 of Komma et al. Further, the use of multiple light sources, each with different light wavelength outputs, are well known in the art of optical pickups, particularly, those optical pickups used to read and write information to both CD's and DVD's. For example Yoo et al. teaches an optical pickup for reading and writing information from CD's and DVD's (See Abstract; Figure 3), wherein the optical pick includes a first source (See 31 in Figure 3) and a second optical source (See 39 in Figure 3), wherein the light output of the first source is focused onto a thinner optical recording medium (See 37 in Figure 4) and the light output of the second source has a different wavelength than that of the first source and is focused onto a thicker optical recording medium (See 41 in Figure 4). Additionally, Yoo et al. (Refer for example to 36 in Figure 5; Figure 7) discloses that the incident surface of the convex lens that is located on the optical axis of the convex lens is a curved refractive surface that provides only a refraction effect (See for example central curved portion 'A' in Figures 4a-b, 7 of Yoo et al.). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the central area provide only a refraction effect, and to have the luminous flux converging to the second, thicker

optical information recording medium be from a second light source and having a wavelength different from the first light source, as taught by Yoo et al., in the convex lens and optical pickup of Komma et al., for the purpose of increasing recording density, particularly when the light wavelength of the second source is shorter than that of the first source (useful for higher recording densities in DVD's by using shorter wavelengths), while reducing or eliminating spherical aberration.

9. Claim 19/14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Komma et al. in view of Yoo et al.

Komma et al. in view of Yoo et al. discloses the invention as set forth above in Claim 14, except for a diffraction grating being provided in the peripheral area far from the central axis. However, Komma et al. additionally teaches a second embodiment wherein the peripheral area of the convex lens (See for example Figures 10a, 10b, 15a, 15b, 15c, 16a, 16b, 19a, 19b, 20) is also disposed with a diffraction grating (See 32 in Figures 10a, 10b, 15a, 15b). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a diffraction grating be provided in the peripheral area far from the central axis in the convex lens of Komma et al. in view of Yoo et al., to control the transmission efficiency of the lens.

Allowable Subject Matter

10. Claim 23 is allowed.

11. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter:

Claims 15 and 23 are allowable over the cited art of record for at least the reason that the cited art of record fails to teach or reasonably suggest a convex lens, as generally recited in Claims 14-15, 23, the convex lens further being characterized in that the diffraction grating of the intermediate area, using diffracted light of the same order, forms luminous flux from the first light source into a reduced wavefront aberration with respect to the first optical information recording medium and forms luminous flux from the second light source into a reduced wavefront aberration with respect to the second optical information recording medium. Claims 16-18, 19/15-18, 20/15-18, 21/15-18, and 22/15-18 are dependent on Claim 15, and hence are allowable for at least the same reasons Claim 15 is allowable.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 9:30 AM - 6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Arnel C. Lavarias
5/4/05

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